

**§ 29.1157 Carburetor air temperature controls.**

There must be a separate carburetor air temperature control for each engine.

**§ 29.1159 Supercharger controls.**

Each supercharger control must be accessible to—

- (a) The pilots; or
- (b) (If there is a separate flight engineer station with a control panel) the flight engineer.

**§ 29.1163 Powerplant accessories.**

(a) Each engine mounted accessory must—

- (1) Be approved for mounting on the engine involved;
  - (2) Use the provisions on the engine for mounting; and
  - (3) Be sealed in such a way as to prevent contamination of the engine oil system and the accessory system.
- (b) Electrical equipment subject to arcing or sparking must be installed, to minimize the probability of igniting flammable fluids or vapors.
- (c) If continued rotation of an engine-driven cabin supercharger or any remote accessory driven by the engine will be a hazard if they malfunction, there must be means to prevent their hazardous rotation without interfering with the continued operation of the engine.

(d) Unless other means are provided, torque limiting means must be provided for accessory drives located on any component of the transmission and rotor drive system to prevent damage to these components from excessive accessory load.

[Doc. No. 5084, 29 FR 16150, Dec. 3, 1964, as amended by Amdt. 29-22, 49 FR 6850, Feb. 23, 1984; Amdt. 29-26, 53 FR 34219, Sept. 2, 1988]

**§ 29.1165 Engine ignition systems.**

(a) Each battery ignition system must be supplemented with a generator that is automatically available as an alternate source of electrical energy to allow continued engine operation if any battery becomes depleted.

(b) The capacity of batteries and generators must be large enough to meet the simultaneous demands of the engine ignition system and the greatest

demands of any electrical system components that draw from the same source.

(c) The design of the engine ignition system must account for—

- (1) The condition of an inoperative generator;
- (2) The condition of a completely depleted battery with the generator running at its normal operating speed; and
- (3) The condition of a completely depleted battery with the generator operating at idling speed, if there is only one battery.

(d) Magneto ground wiring (for separate ignition circuits) that lies on the engine side of any firewall must be installed, located, or protected, to minimize the probability of the simultaneous failure of two or more wires as a result of mechanical damage, electrical fault, or other cause.

(e) No ground wire for any engine may be routed through a fire zone of another engine unless each part of that wire within that zone is fireproof.

(f) Each ignition system must be independent of any electrical circuit that is not used for assisting, controlling, or analyzing the operation of that system.

(g) There must be means to warn appropriate crewmembers if the malfunctioning of any part of the electrical system is causing the continuous discharge of any battery necessary for engine ignition.

[Doc. No. 5084, 29 FR 16150, Dec. 3, 1964, as amended by Amdt. 29-12, 41 FR 55473, Dec. 20, 1976]

**POWERPLANT FIRE PROTECTION****§ 29.1181 Designated fire zones: regions included.**

(a) Designated fire zones are—

- (1) The engine power section of reciprocating engines;
- (2) The engine accessory section of reciprocating engines;
- (3) Any complete powerplant compartment in which there is no isolation between the engine power section and the engine accessory section, for reciprocating engines;
- (4) Any auxiliary power unit compartment;